

## INFORMATION COMMUNICATION TECHNOLOGY: A CATALYST FOR ENHANCING THE ROLE OF LIBRARIES IN THE CREATION OF AN INFORMATION SOCIETY

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### ABSTRACT

The advances in ICTs have decisively changed the method of operation in the library and learning environment which has in turn transited into information society. This transition has metamorphosed the world today into a fast and massive transformation in social, cultural, political and economic terms. This transformation process affects almost all organizational structures. One of the structures that is affected of this process is the library with its culturally and socially organizational characteristics as they collect, preserve and disseminate the information and eventually aim to meet the information needs of the society trough massive adoption of ICT. The aim of this study is to examine how libraries adopt ICT in the creation of an information society and to give information on the status of the libraries in the information society.

**Keywords:** ICT, Library, Information Society.

### INTRODUCTION

When the history of the human kind is investigated, the social transformation could be observed as from the agricultural society to industrial society and then to information society. Information is the foundation of power and efficiency since the early days of the humanity in every aspect. When the dynamics of the information society is rapid change, information has absolute and exclusive value if compared to the previous periods in this changing atmosphere. The increasing information volume along with the instant pace of the information flow has consequently brought a rapid change as well. Many institutions have been affected from this rapid transformation and had to keep up with the experienced change and even role themselves as the pioneers (Ahmad & Fatima, 2009). In this sense, the transformation period to the information society has subsequently affected the libraries whose basic function is to meet the information needs and provide information service to their societies. It is an indispensable need for the libraries to renovate themselves and undertake newer responsibilities in this dynamic process.

Libraries are one of the leading educational institutions which present the knowledge and materials to the people according to their needs. Except for the formal educational services at schools, libraries function as to support individual learning efforts at independent library halls and virtual platforms. Hence, the libraries have an important and unique role in the education of the society. Specifically, libraries are one of the important axes of the transformation process to the information society. Because, in order to actualize personal centered learning paradigm, individuals should go to the libraries on their own will (Barney, 2003).

Ever since the 1980s, 'information society' has been one of the key terms used to describe today's world. It has been employed variously as a social, cultural, economic and technical concept, and is typically seen as the natural development of the European liberal tradition, or of American technological modernity. Whether welcome or undesired, the information society is here, and it is therefore essential to clearly define its fundamental characteristics and principles.

This document is based on a number of declarations of principal roles of information and communication technologies (ICT) in library and its importance in the creation of an information society.

## INFORMATION COMMUNICATION TECHNOLOGY AS A CONCEPT

The term 'Information and Communication Technology' (ICT) first appeared in the mid 1980s and was defined as "All kinds of electronic systems used for broadcasting telecommunications and mediated communications", with examples including personal computers, video games, cell phones, internet and electronic payment systems and computers etc. The ICT is made of computer and communication technology. The computer technology is the tool for storing and processing information in digital form while communication technology helps us to transfer and disseminate digital information. Additionally ICT means a variety of technological applications in the process and communication of information. The word ICT is a combination of two words information, communication & technology. Information means knowledge and technology means use of computer & communication. The term ICT can also be defined as "the integration of computing, networking and information processing technologies and their applications" (Riyasat & Fatima, 2008). ICTs represent today's world what industrial machines represented during the industrial revolution; they have revolutionized ways of working, transformed the economy, had an irreversible impact on the way people live, and have shaped a new information society. Information and communication technologies are seen by various bodies of the international community as being, *inter alia*: a *bridge* between developed and developing countries [DOI and DOT Force]

- a tool for economic and social development [WTDC 1994, Seoul Declaration, ADF 02]
- an engine for growth [The Missing Link Report, 1984];
- the central pillar for the construction of a global knowledge-based economy and society [Florianopolis Declaration];
- An opportunity for countries to free themselves from the tyranny of geography [ESCAP 2000].

Information and Communication Technology (ICT), is a composite term, which embodies three important concepts. To understand ICT, one must understand all three concepts.

❖ **Information:** this means many things to many people, depending on the context. Scientifically, information is processed data. Information can also be loosely defined as that which aids decision making. Information, though abstract, could also be visualized as a commodity, which could be bought or sold. Other writers have defined information as: Any potentially useful fact, quantity or value that can be expressed uniquely with exactness. Information is whatever is capable of causing a human mind to change its opinion about the current state of the real world (deWatteville and Gilbert 2000)

❖ **Communication:** this refers to the transfer or exchange of information from person to person or from one place to another. When action produces a reaction, whether positive or negative, communication has taken place. Other writers in the field of communication studies have defined communication as: a process, a transfer of information, ideas, thoughts and messages. It involves a sender, a receiver, a code and, a language that is understood by both the sender and the receiver.

It is a process involving the passing of messages through the use of symbols which all parties in the communication encounter understand. It involves the exchange of ideas, facts, opinions, attitudes and beliefs between people. It is not a one-way affair. There must be a sender to transmit the message, and receiver to make appropriate decisions on how the rest of the exchange should continue. (James, et al., 2004)

❖ **Technology:** This refers to the use of scientific knowledge to invent tools that assist human beings in their efforts to overcome environmental hazards and impediments to comfort. In this regard, technology refers to the things like the computer, telephone, cell phone, GSM handsets, television, radio, etc.

Put together, therefore, ICT has been defined as:

The acquisition, analysis, manipulation, storage and distribution of information and the design and provision of equipment and software for these purposes (deWatteville and Gilbert 2000). ICT and Information Technology (IT) are similar concepts that can be used interchangeably. IT implies communication and therefore it becomes obvious that the two terms are synonymous.

### **The Information Society**

There has been a greater realization of the significant revolution in ICTs as veritable tools for shaping the present and future worlds. This has implications for the realization of the development goals outlined in the Millennium Declaration. This prompted world leaders to embark on a global vision and a global dialogue needed to build the framework of an all-inclusive and equitable Information Society. The increasing prime of place giving to information through technological development and deployment evolves into an Information Society (Omekwu, 2005). An information society is one whereby information is seen as a tradable commodity i.e a commodity that can be bought and sold in the information market place for a given price. A commodity that is indispensable for national development. Given the significance of information and knowledge, there arose the need, desire and commitment over the world, to build a people-centered, all-inclusive and development-oriented Information Society, where everyone can create, access, utilize and share information and knowledge, enabling individuals, communities and peoples to utilize their full potential in promoting sustainable development and improving their quality of life (UN/ITU, 2005). The World Summit on the Information Society (WSIS) is at the centre of the efforts aimed at facilitating these objectives. The Summit is an initiative of the International Telecommunication Union (ITU), a United Nations specialized agency. Organized in two phases, the first Summit, hosted by Switzerland, took place in Geneva (10th-12th December, 2003) and the second, in Tunis (16<sup>th</sup>, 18<sup>th</sup> November, 2005).

## Information Communication Technology and the Library

In the era of information explosion, tremendous amount of information is being generated and transmitted from every corner of the world in the form of print materials, research articles, lectures, presentations, video conferencing, technical reports, standards and patents etc. In the early stages of 20<sup>th</sup> century, libraries were facing the problems of how to cater and fulfill the users' demand in a minimum span of time. The solution was to adopt the ICT based products & services. To deal with new challenges and increasing demand of users, libraries are reconsolidating; reshaping, redesigning and repackaging their services and information products by incorporating ICT based products & services. Owing to ICT enabled products & services, libraries have changed the way, in terms of the provision of information services. These products and services are the integration of computer and communication technologies, which can be apply to store and disseminate the information. They have changed the traditional practices of libraries in delivery of services (Ahmad & Fatima, 2009).

In the present scenario, users can have access to a variety of information and digital archives of libraries from any corner, as well as can get updated activities of libraries by the SMS on their mobile phones. It also helps users to access, manage, integrate, evaluate, create, and communicate with other users more easily than ever; it can be made possible by the emergence of library 2.0. The significant developments in ICT have forever changed the way of information gathering, processing and disseminating. The ICT products and services is somehow melting the physical walls of library; paving way for a library without walls or virtual library. Development is a continuous process; every development brings new opportunities in the respective fields. The ICT based products & services have brought a great revolution in the field of education and libraries are no exception in this context (Kumbhar, 2009).

The libraries are considered as heart of every educational & research institution. Owing to these new ICT products & services, the library services has been drastically changed. There are even change in librarianship vocabulary: 'dissemination' is being replaced by 'communication', 'database' by 'repository', 'literature' by 'knowledge', 'search' by 'navigation', etc (Akintunde, 2004) . The present boon of ICT based products & services have a great impact on libraries and the impact is quite perceptible right from the beginning as the libraries started adopting ICT in the form of automation, stage of digital archives,, and now we are talking about library services on mobile phones.

Benefits of ICT based products & services in the library

The ICT products & services are beneficial for the libraries in the following ways:

1. It provides efficient and accurate services.
2. It saves the time, space, energy and resources.
3. It helps for controlling the tremendous escalation of information.
4. It assists to provide high quality of services and increases the range of services.
5. It has invented the ways of resource sharing by operation and coordination.
6. ICT makes library work easier, faster, cheaper and more effective.
7. Helps to manage information overload as information retrieval is made easier in computerized systems.
8. Remote access is enabled through networked systems
9. Computerization saves space and reduces paper work.

### **Challenges of using ICT in libraries**

1. Poor funding of ICT infrastructures
2. Constant changes of software and hardware
3. Erratic power supply
4. Insufficient bandwidth
5. Lack of technical knowledge by library staff
6. Copyright and intellectual property rights management

### **The Role of Libraries in Society**

Having a comprehensive, country-wide network of libraries in literate societies is a relatively recent phenomenon dating from the late nineteenth century. Historically, public libraries have a strong tradition in Anglo-American societies. The United Kingdom passed the first library law in 1850. Libraries were first introduced in the North-American colonies with the aim of educating the settlers in the new world. Early discussion clubs, modeling themselves on English benevolent societies, developed small book collections for their members' use. Religious denominations also contributed to public education and supported the emergence of free public libraries. As early as the 1890s, the public library in the United States responded to the language and literacy needs of a large influx of immigrants, providing English and citizenship classes in many urban libraries. At the beginning of the twentieth century, libraries were part of an awakening consciousness that saw education as an instrument for social change (Krolak, 2002). After World War II, mainstream libraries gradually started to extend their services to community groups and, by the 1960s, a special focus was set on reaching marginalized groups. In the following years, libraries played an important role in national literacy campaigns, for example in Thailand. In the 1980s, more flexible and proactive facilities, often called resource centres, began to emerge as a force in movements for social change and the democratic reconstruction of civil society. These centres began to explore new relationships with their users, valuing local culture, supporting community development, and preserving indigenous knowledge (Adams, 2002: 33-34).

Today the role of libraries and professional librarians is changing worldwide. They are no longer passive keepers and preservers of books; rather, they have evolved to become facilitators of information and lifelong learning opportunities with an emphasis on service, identifying user needs and communicating solutions. Modern libraries are unfolding the community's learning potentials by providing information on community issues, such as health, employment, continuing education and local history. This equitable access to information is essential to enable educated and informed citizens to participate in a democratic global community.

Libraries are also custodians of the local and national culture by storing popular and academic knowledge and material for current and future generations. Public libraries play the most important role worldwide in helping to bridge the information gap by providing free access to information and communication technologies, particularly the Internet. They are inclusive in that they build bridges between individuals at the local level and the global level of knowledge. In industrialized countries, access to modern information technology is currently one of the most attractive library services. For example, in the United Kingdom, public libraries secured government funding in the middle of the 1990s for computers in every library as part of the "People's Network Project" (Bertelsmann Stiftung, 2004: 24), a project that assures that no one needs to be excluded from the information revolution.

Compared to providing access to ICTs and the Internet in other public spaces such as post offices, libraries have the educational role of assisting users in finding information online. A best practice study of the German Bertelsmann Stiftung (Bertelsmann Stiftung, 2004) showed that the library systems in the United Kingdom, Denmark, Finland, United States of America and Singapore are modern examples of highly developed library systems. They share a common trait – they have established themselves as an integral part of a national education and information strategy based on library laws and appropriate funding. They offer free access to information, are highly service-oriented, and constantly improve their services through co-operation and networking. These are hybrid libraries that offer traditional media and have a strong focus on providing access to online information. As a result they are used and highly appreciated by 75–90% of the population. Libraries, increasingly in co-operation with other community organizations, offer a varying amount of activities including author readings, creative writing classes, introductions to information and communication technologies and the Internet, reading groups, exhibitions and summer reading programs, study support, discussion groups and art classes such as drama, poetry and song. The list is endless and activities over the decades show the flexibility of library services to address the needs of the community.

### **The Changing Roles of Libraries in the creation of an information society**

One primary role of librarians is to provide leadership and expertise in the design, development, and ethical management of knowledge-based information systems in order to meet the information needs and obligations of the patron or institution. Electronic information provides librarians with challenges that are not necessarily new. However, as the nature of the librarians' roles change, so do the challenges to longstanding professional codes of ethics. Marshall Keyes writes that in the future, as now, 'we can expect the virtual library to be the organization that identifies, selects, negotiates for, and provides access to an incredible range of information resources on behalf of the society'. A 1998 survey published by the Special Libraries Association (SLA) found that, although the libraries' roles are indeed changing, librarians foresee their role evolving to that of consultant and planner, where they facilitate the delivery of end users information needs through the corporate network (i.e. manage the content, train end users, and deal with more complex inquiries). At the strategic level, they play an important role in managing the knowledge resources of the organization. Keyes writes that the evolution toward a digital library creates a change in the 'locus of control', as the library's collection is moving outside the library itself. Digital collections are now stored off-site, and the individual library now have far less control than today over the actual availability of information to the end user. Electronic information creates challenges for the library community at its very foundation, moving it away from the traditional paper-and-print format to an ethereal world of circuits and connectivity. The library is no longer defined simply as a building or a physical repository that houses information. The report entitled *The Changing Role of the Informational Professional 2000* tells us that 'two-thirds of survey respondents are moving toward fully-digital or nearly digital libraries, making it more feasible to serve distant customers'. The terms 'digital library' and 'virtual library' imply 'a library that provides access to a collection of distributed information in electronic format through pointers provided locally... or a collection of digital object housed in the same place, virtual or physical'. The virtual or digital library will have many familiar library features, but there will be a change in the way in which the library acquires and provides access to collections and in the composition and roles of the library staff. The globalization of information means that access to information is no longer limited by what is available in the local collection. The librarian is no longer the primary 'gatekeeper' or guide to information.

Greater challenges in evaluating content, especially health or medical resources in multiple formats, face the librarian. Moving toward a digital or virtual library challenges not only the accessibility of the information but also the entire philosophy of what constitutes a document. Many librarians already heard that by the year 2000, all new resources would be digital. Although we have not quite reached that point, today most libraries are struggling to maintain a transitional library collection and organizing both print and electronic resources. Crawford (2000) submits that ‘ongoing complexity and unpredictable currents of change will mark the future of libraries.

Even the terminology describing information is changing. Once we described information in a printed, permanent format as a “document”; now, information is described as a ‘resource. Before, user looked at one book or journal at a time. Now, electronic information can be stored and accessed by millions of users simultaneously from personal computers (PCs) with modems or through direct Internet connections from home, work, or practically anywhere. Patrons no longer have to physically visit the library to retrieve information. This ability to access full-text resources electronically from within the institution or from any PC provides the user with convenient and immediate access to information. Expanded use of interlibrary loan and document delivery also offers the potential to provide access to all materials, rather than only to materials owned locally. The library institution, which is traditionally and historically the Custodian of knowledge and information, has witnessed a paradigm shift from traditional information handling methodologies to technological platforms. This tends to transfer the information and knowledge custodian roles of libraries to other institutions and professions like the computer, communication, information and knowledge. Yet, different types of libraries remain the dynamic engines for the information society. The primacy of information/knowledge in today’s society. It is no longer news that the world has moved from the ‘Industrial Age’ into the Information Age”. The world today, boasts of a knowledge-based and an information-driven economy. The present world order is being ruled, strictly by the power of information; rather than by that of money. There has come to be, in today’s world, a full realization of the fact that information remains ‘the prime commodity of the present age’ (Issa, 2002). The advanced economies, however, understand and appreciate this long-established fact more than do the developing ones. Indeed, the availability and free flow of information bring about knowledge; representing a basic requirement for the emergence of quality and comprehensive participation by the citizenry. Experience and new knowledge combine to bring about information, which remains vital commodity for the healthy development of the individuals and the society. Information and knowledge are a key resource sought after by all—for a variety of needs which include problem-solving, decision-making or both; by the young, old, educated and uneducated regardless of their occupations. Acquiring information is critical for individual job performance and also as a means of influencing decision-making positively for the good of all. Nations, which possess capacity to gather and process information (i.e. monopolizing information), have an over-bearing socio-economic and political influence over others that are information poor. This partly explains how information access has served as an economic weapon used by an information superior nation against the less superior ones by disallowing them access to information databases under its control. This has led to a greater awareness and appreciation of the power of information as a key resource for development in developing countries today than it was the situation some decades ago (Aliyu and Issa, 2003).

## CONCLUSION AND SUGGESTIONS

Libraries are one of the institutions affected by the change in the information society process. The education function structure of libraries which are conducted as an extension to the formal education should be extensively reviewed. In the frame of new approaches like information literacy and lifelong learning, some structural and functional alternations are inevitable at the libraries. Consequently, information society represents a fast change and transformation. In order to adapt to the ongoing process, libraries should be restructured according to today's needs. Here are some suggestions of things that the libraries should arm themselves with if they truly want to contribute their quota to creation of an information society:

1. Knowledge is an authentic wealth and primary source of abundance in the information society. From this point of view, it is inevitable for libraries to undertake new and
2. challenging responsibilities in the information society. Libraries should have intensive technological installations in the information society in order to gain functionality. Libraries should have advanced technology and more Professional service.
3. In an environment where the information society prioritizes the democracy, libraries, as a learning institution, should have a democratic participation feature about their self-decisions. Parallel to this feature, libraries of the information society should include much more diversity and always accord themselves with the environment via their flexibility feature.
4. After the decrease in the centrist policies, in the information society, libraries should have a formation that renew itself, open to change and offer alternative services with social and cultural activities in addition to the educational missions.
5. Libraries should also offer wider services by cooperating with companies, advisory corporations, governmental offices and voluntary agencies. Libraries in the information society need to be more sophisticated.
6. Based on lifelong learning, libraries of the information society should be institutions following organizational, cultural and scientific developments, valuing human resources and helping the individuals to improve themselves.
7. Libraries of the information society are responsible for offering universal information service, enhancing scientific, artistic and social activities and being a learning institution as well because libraries should be in constant contact and cooperation with the community, universe, governments and business world in today's information society.

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